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Scarlet Fever Streptococcus Antitoxin

Lederle

Refined and
Concentrated

LEDERLE
ANTITOXIN LABORATORIES
NEW YORK

Scarlet Fever Streptococcus Antitoxin

Refined and Concentrated

is prepared from horses immunized by the subcutaneous injection of the toxic filtrate obtained by growing the scarlet fever streptococcus in broth; also by injecting cultures of the scarlet fever streptococcus.

It is processed by methods similar to those used in the preparation of refined and concentrated Diphtheria Antitoxin. This makes possible a dose of antitoxin in small volume more convenient for injection and also reduces the number and severity of serum reactions.

Clinical Uses

Scarlet Fever Streptococcus Antitoxin has three uses; first and foremost it may be used in the curative treatment of scarlet fever; second, it may be used as a prophylactic measure in the protection of susceptible individuals who have been exposed to scarlet fever, and third, it may be used for the blanching test in differentiating the rash of scarlet fever from other rashes.

TREATMENT: The benefit resulting from the injection of refined and concentrated Scarlet Fever Streptococcus Antitoxin is so marked that the physician is justified in using the antitoxin in all but the very mild types of scarlet fever. The beneficial results consist not only in the prompt relief of toxic symptoms, but also in the lessening of the number of secondary complications. It is highly important to use the antitoxin early, for its effect is most marked if used before the third day of the disease.

BLAKE has shown that the antitoxin must be used within the first seven days of the disease if beneficial results are to be expected; because normal antitoxin may be demonstrated to have replaced the toxin in the patient's blood from the ninth to the twelfth day of the disease. Hence, if the antitoxin is administered after the seventh day its beneficial action is doubtful, because the patient is then deriving benefit from his own normal antitoxin.

For all except toxic cases, the antitoxin may be given intramuscularly in the gluteal region; but in toxic cases it should be administered intravenously.

When sufficient dosage has been used the effects of the antitoxin are very striking. The rash begins to fade, there is a drop in the leucocyte count, in the pulse rate, and rapid subsidence of the angina. Toxic symptoms should improve in 12 hours after intramuscular injections of the antitoxin and within 6 hours following an intravenous injection.

BLAKE reported a series of 93 cases in which the antitoxic serum treatment was used. Of these, 92 were cured and 1 died. The fatal case was treated with antitoxin late in the disease. Only 10 developed secondary complications. Hence, there seems to be an indirect benefit from the antitoxin on septic complications. PARK has reported that this indirect benefit on septic complications follows the use of the antitoxin, regardless of whether it is prepared by the DOCHEZ method or by the DICK method.

In some patients serum sickness follows the use of Scarlet Fever Streptococcus Antitoxin but now that this product is available as a refined and concentrated antitoxin these reactions should be reduced to the same small percentage that is met with after the use of refined and concentrated Diphtheria Antitoxin.

PROPHYLAXIS: Persons exposed to scarlet fever may be given immediate protection by the injection of a small dose of Scarlet Fever Antitoxin. Such protection is of relatively short duration, lasting probably about two weeks.

In order to limit the use of antitoxin as a prophylactic to only those who need this immediate protection the following procedure is suggested.

After definite exposure, the DICK test is made (as soon as possible) and, when facilities are available, at the same time a culture from the throat is made on blood agar plates. If the DICK test is negative, nothing further is done; for the person is considered to be immune. If the DICK test is positive the throat culture should be examined and those showing a positive throat culture for hemolytic streptococci should be given a prophylactic dose of Scarlet Fever Antitoxin for temporary protection. Those showing a negative throat culture should be given the more lasting protection by administering the prophylactic treatment with Scarlet Fever Toxin.

DIAGNOSIS: The blanching test or SCHULTZ-CHARLTON phenomenon has been made use of to differentiate the rash of scarlet fever from the eruptive characteristics of other infectious diseases such as confluent measles, typhoid fever, influenza and the drug rashes. The test is carried out by injecting intradermally 0.1 cc to 0.2 cc of antitoxin at a point where the eruption is most intense. After 6 to 12 hours the rash, if it be due to scarlet fever, is definitely and completely blotted out in a zone of varying size surrounding the point of injection. The area is usually oval in shape with clearly defined edges, and within the zone the raised points of the eruption disappear and the skin becomes smooth. The blanched area persists throughout the disease and is protected from desquamation. In other words, there is actually a local cure in the blanched area, due to neutralization of the toxin in the tissues by the antitoxin which is injected. The most favorable time for obtaining the blanching phenomenon in scarlet fever is during the second day of the eruption.

Dosage

For Prophylaxis: Inject subcutaneously, antitoxin sufficient to neutralize 50,000 skin test doses of toxin.

For Treatment: Inject intravenously, antitoxin sufficient to neutralize 500,000 skin test doses of toxin,

or

Inject intramuscularly, antitoxin sufficient to neutralize 1,000,000 skin test doses of toxin.

This dosage for treatment has been established after comparative clinical trials with larger and smaller dosage and is designed to produce relief of symptoms in 6 hours after intravenous injection or 12 hours after intramuscular injection. In the absence of these results the dose should be repeated. Higher dosage may be indicated in severely toxic cases.

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Code Word	
SCATO	Prophylactic Dose in syringe Antitoxin sufficient to neutralize 50,000 S T D toxin
SCLIM	Treatment Dose in syringe Antitoxin sufficient to neutralize 500,000 S T D toxin

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